Please amend the application as follows:

In the Claims

Please cancel Claims 19, 20-26, 28-38, 46, 52-59.

Please amend Claims 1, 2, 8, 9, 11, 17, 39, 40, 44, 45, 47, 48, 49, 51. Amendments to the claims are indicated in the attached "Marked Up Version of Amendments" (pages i - v).

C1

1. (Twice Amended) A method of cloning a mammal, comprising the steps of:
   a. fusing a somatic activated donor cell and an activated, enucleated oocyte in telophase II and of the same species as the donor cell, to thereby form a nuclear transfer embryo;
   b. impregnating a mammal of the same species as the nuclear transfer embryo with the fused nuclear transfer embryo under conditions suitable for gestation of the cloned mammal; and
   c. gestating the embryo in step b., thereby causing the embryo to develop into the cloned mammal.

C2

2. (Amended) The method of Claim 1, wherein the activated donor cell is in the G_1 stage of a mitotic cell cycle.

C3

8. (Twice Amended) A method of producing a transgenic mammal, comprising the steps of:
   a. fusing a somatic activated donor cell having a genetically engineered nucleus and an activated, enucleated oocyte in telophase II and of the same species as the donor cell, to thereby form a transgenic nuclear transfer embryo;
   b. impregnating a mammal of the same species as the nuclear transfer embryo with the fused, nuclear transfer embryo under conditions suitable for gestation of the transgenic mammal; and
   c. gestating the embryo in step b., thereby causing the embryo to develop into the transgenic mammal.

C4

9. (Amended) The method of Claim 8, wherein the activated donor cell is in the G_1 stage of a mitotic cell cycle.

C5

11. (Twice Amended) A method of producing a mammalian nuclear transfer embryo, comprising fusing a somatic activated donor cell and an activated, enucleated oocyte in telophase II and of the same species as the donor cell, to thereby form a nuclear transfer embryo.

C6

17. (Twice Amended) The method of Claim 16, wherein the somatic activated donor cell is in the G_1 stage of a mitotic cell cycle.

C7

39. (Amended) A method of cloning a mammalian fetus, comprising the steps of:

a. fusing a somatic activated donor cell and an activated, enucleated oocyte in telophase II and of the same species as the donor cell, to thereby form a nuclear transfer embryo;

b. impregnating a mammal of the same species as the nuclear transfer embryo with the fused nuclear transfer embryo under conditions suitable for gestation of the cloned mammalian fetus; and

c. gestating the embryo in step b., thereby causing the embryo to develop into the cloned mammalian fetus.

40. (Amended) The method of Claim 39, wherein the activated donor cell is in the G_1 stage of a mitotic cell cycle.

C8

44. (Amended) A method of cloning a non-human mammal, comprising the steps of:

a. fusing a somatic activated donor cell and an activated, enucleated oocyte in telophase II and of the same species as the donor cell, to thereby form a nuclear transfer embryo;

C8 cont'd

b. impregnating a non-human mammal of the same species as the nuclear transfer embryo with the fused nuclear transfer embryo under conditions suitable for gestation of the cloned non-human mammal; and

c. gestating the embryo in step b., thereby causing the embryo to develop into the cloned non-human mammal.

45. (Amended) A method of producing a transgenic non-human mammal, comprising the steps of:

a. fusing a somatic activated donor cell having a genetically engineered nucleus and an activated, enucleated oocyte in telophase II and of the same species as the donor cell, to thereby form a transgenic nuclear transfer embryo;

b. impregnating a non-human mammal of the same species as the nuclear transfer embryo with the transgenic nuclear transfer embryo under conditions suitable for gestation of the transgenic non-human mammal; and

c. gestating the embryo in step b., thereby causing the embryo to develop into the transgenic non-human mammal.

C9

47. (Amended) A method of cloning a non-human mammalian fetus, comprising the steps of:

a. fusing a somatic activated donor cell and an activated, enucleated oocyte in telophase II and of the same species as the donor cell, to thereby form a nuclear transfer embryo;

b. impregnating a non-human mammal of the same species as the nuclear transfer embryo with the fused nuclear transfer embryo under conditions suitable for gestation of the cloned non-human mammalian fetus; and

c. gestating the embryo in step b., thereby causing the embryo to develop into the non-human mammalian fetus.

48. (Amended) A method of cloning a mammal, comprising the steps of:

c9 amd

a. fusing a somatic activated donor cell and an activated, enucleated oocyte derived from an oocyte having a first polar body and an extruding second polar body, and of the same species as the donor cell, to thereby form a nuclear transfer embryo;

b. impregnating a mammal of the same species as the nuclear transfer embryo with the fused nuclear transfer embryo under conditions suitable for gestation of the cloned mammal; and

c. gestating the embryo in step b., thereby causing the embryo to develop into the cloned mammal.

49. (Amended) A method of producing a transgenic mammal, comprising the steps of:

a. fusing a somatic activated donor cell having a genetically engineered nucleus and an activated, enucleated oocyte derived from an oocyte having a first polar body and an extruding second polar body, and of the same species as the donor cell, to thereby form a transgenic nuclear transfer embryo;

b. impregnating a mammal of the same species as the nuclear transfer embryo with the fused transgenic nuclear transfer embryo under conditions suitable for gestation of the transgenic mammal; and

c. gestating the embryo in step b., thereby causing the embryo to develop into the transgenic mammal.

C10

51. (Amended) A method of producing a mammalian fetus, comprising the steps of:

a. fusing a somatic activated donor cell and an activated, enucleated oocyte derived from an oocyte having a first polar body and an extruding second polar body, and of the same species as the donor cell, to thereby form a nuclear transfer embryo;

b. impregnating a mammal of the same species as the nuclear transfer embryo with the fused nuclear transfer embryo under conditions suitable for gestation of the mammalian fetus; and

c. gestating the embryo in step b., thereby causing the embryo to develop into the mammalian fetus.

Please add new Claims 60-93.

C11

60. (New) The method of Claim 44, wherein the activated donor cell is in the G_1 stage of a mitotic cell cycle.

61. (New) The method of Claim 44, wherein the somatic cell is an adult somatic cell or an embryonic somatic cell.

62. (New) The method of Claim 44, wherein the somatic cell is a fibroblast cell or an epithelial cell.

63. (New) The method of Claim 44, wherein the oocyte is enucleated chemically, by X-ray irradiation, by laser irradiation or by physical removal.

64. (New) The method of Claim 45, wherein the activated donor cell is in the G_1 stage of a mitotic cell cycle.

65. (New) The method of Claim 45, wherein the somatic cell is an adult somatic cell or an embryonic somatic cell.

66. (New) The method of Claim 45, wherein the somatic cell is a fibroblast cell or an epithelial cell.

67. (New) The method of Claim 45, wherein the oocyte is enucleated chemically, by X-ray irradiation, by laser irradiation or by physical removal.

68. (New) The method of Claim 47, wherein the activated donor cell is in the G_1 stage of a mitotic cell cycle.

69. (New) The method of Claim 47, wherein the somatic cell is an adult somatic cell or an embryonic somatic cell.

70. (New) The method of Claim 47, wherein the somatic cell is a fibroblast cell or an epithelial cell.

71. (New) The method of Claim 47, wherein the oocyte is enucleated chemically, by X-ray irradiation, by laser irradiation or by physical removal.

72. (New) The method of Claim 48, wherein the activated donor cell is in the G_1 stage of a mitotic cell cycle.

73. (New) The method of Claim 48, wherein the somatic cell is an adult somatic cell or an embryonic somatic cell.

74. (New) The method of Claim 48, wherein the somatic cell is a fibroblast cell or an epithelial cell.

75. (New) The method of Claim 48, wherein the oocyte is enucleated chemically, by X-ray irradiation, by laser irradiation or by physical removal.

76. (New) The method of Claim 49, wherein the activated donor cell is in the G_1 stage of a mitotic cell cycle.

77. (New) The method of Claim 49, wherein the somatic cell is an adult somatic cell or an embryonic somatic cell.

78. (New) The method of Claim 49, wherein the somatic cell is a fibroblast cell or an epithelial cell.

79. (New) The method of Claim 49, wherein the oocyte is enucleated chemically, by X-ray irradiation, by laser irradiation or by physical removal.

80. (New) The method of Claim 51, wherein the activated donor cell is in the G_1 stage of a mitotic cell cycle.

81. (New) The method of Claim 51, wherein the somatic cell is an adult somatic cell or an embryonic somatic cell.

82. (New) The method of Claim 51, wherein the somatic cell is a fibroblast cell or an epithelial cell.

83. (New) The method of Claim 51, wherein the oocyte is enucleated chemically, by X-ray irradiation, by laser irradiation or by physical removal.

84. (New) A method of cloning a mammal, comprising the steps of:

a. injecting contents of a somatic activated donor cell including a nucleus into an activated, enucleated oocyte in telophase II and of the same species as the donor cell, to thereby form a nuclear transfer embryo;

b. impregnating a mammal of the same species as the nuclear transfer embryo with the fused nuclear transfer embryo under conditions suitable for gestation of the cloned mammal; and

c. gestating the embryo in step b., thereby causing the embryo to develop into the cloned mammal.

85. (New) A method of producing a transgenic mammal, comprising the steps of:

a. injecting contents of a somatic activated donor cell including a genetically engineered nucleus into an activated, enucleated oocyte in telophase II and of the same species as the donor cell, to thereby form a transgenic nuclear transfer embryo;

b. impregnating a mammal of the same species as the nuclear transfer embryo with the fused, nuclear transfer embryo under conditions suitable for gestation of the transgenic mammal; and

c. gestating the embryo in step b., thereby causing the embryo to develop into the transgenic mammal.

86. (New) A method of producing a mammalian nuclear transfer embryo, comprising injecting contents of a somatic activated donor cell including a nucleus with an activated, enucleated oocyte in telophase II and of the same species as the donor cell, to thereby form a nuclear transfer embryo.

87. (New) A method of cloning a mammalian fetus, comprising the steps of:

a. injecting contents of a somatic activated donor cell including a nucleus into an activated, enucleated oocyte in telophase II and of the same species as the donor cell, to thereby form a nuclear transfer embryo;

b. impregnating a mammal of the same species as the nuclear transfer embryo with the fused nuclear transfer embryo under conditions suitable for gestation of the cloned mammalian fetus; and

c. gestating the embryo in step b., thereby causing the embryo to develop into the cloned mammalian fetus.

88. (New) A method of cloning a non-human mammal, comprising the steps of:

a. injecting contents of a somatic activated donor cell including a nucleus into an activated, enucleated oocyte in telophase II and of the same species as the donor cell, to thereby form a nuclear transfer embryo;

b. impregnating a non-human mammal of the same species as the nuclear transfer embryo with the fused nuclear transfer embryo under conditions suitable for gestation of the cloned non-human mammal; and

c. gestating the embryo in step b., thereby causing the embryo to develop into the cloned non-human mammal.

89. (New) A method of producing a transgenic non-human mammal, comprising the steps of:

a. injecting contents of a somatic activated donor cell including a genetically engineered nucleus into an activated, enucleated oocyte in telophase II and of the same species as the donor cell, to thereby form a transgenic nuclear transfer embryo;

b. impregnating a non-human mammal of the same species as the nuclear transfer embryo with the transgenic nuclear transfer embryo under conditions suitable for gestation of the transgenic non-human mammal; and

c. gestating the embryo in step b., thereby causing the embryo to develop into the transgenic non-human mammal.

90. (New) A method of cloning a non-human mammalian fetus, comprising the steps of:

a. injecting contents of a somatic activated donor cell including a nucleus into an activated, enucleated oocyte in telophase II and of the same species as the donor cell, to thereby form a nuclear transfer embryo;

b. impregnating a non-human mammal of the same species as the nuclear transfer embryo with the fused nuclear transfer embryo under conditions suitable for gestation of the cloned non-human mammalian fetus; and

c. gestating the embryo in step b., thereby causing the embryo to develop into the cloned non-human mammalian fetus.

91. (New) A method of cloning a mammal, comprising the steps of:

a. injecting contents of a somatic activated donor cell including a nucleus into an activated, enucleated oocyte derived from an oocyte having a first polar body and an extruding second polar body, and of the same species as the donor cell, to thereby form a nuclear transfer embryo;

b. impregnating a mammal of the same species as the nuclear transfer embryo with the fused nuclear transfer embryo under conditions suitable for gestation of the cloned mammal; and

c. gestating the embryo in step b., thereby causing the embryo to develop into the cloned mammal.

c11 concld

92. (New) A method of producing a transgenic mammal, comprising the steps of:

a. injecting contents of a somatic activated donor cell including a genetically engineered nucleus into an activated, enucleated oocyte derived from an oocyte having a first polar body and an extruding second polar body, and of the same species as the donor cell, to thereby form a transgenic nuclear transfer embryo;

b. impregnating a mammal of the same species as the nuclear transfer embryo with the fused transgenic nuclear transfer embryo under conditions suitable for gestation of the transgenic mammal; and

c. gestating the embryo in step b., thereby causing the embryo to develop into the transgenic mammal.

93. (New) A method of producing a mammalian fetus, comprising the steps of:

a. injecting contents of a somatic activated donor cell including a nucleus into an activated, enucleated oocyte derived from an oocyte having a first polar body and an extruding second polar body, and of the same species as the donor cell, to thereby form a nuclear transfer embryo;

b. impregnating a mammal of the same species as the nuclear transfer embryo with the fused nuclear transfer embryo under conditions suitable for gestation of the cloned fetus; and

c. gestating the embryo in step b., thereby causing the embryo to develop into the mammalian fetus.

REMARKS

Claims Proposed by Examiner in a Facsimile Dated November 15, 2001 and Claim Amendments

The Examiner kindly faxed Applicants a proposed claim set prior to issuance of an Office Action, dated November 30, 2001, Paper 18. In a telephone conference following issuance of the